REMARKS

This Amendment cancels claims 3, 5, 12, 13, and 15, and amends claim 1 in accordance with the original disclosure. Support for the claim amendments is found, for example, in canceled claims 3, 5, 12, 13, and 15 and in the specification at page 7, lines 5-19. Claims 1 and 7-11 remain in this application.

Rejections Under 35 U.S.C. § 103(a)

Claims 1, 3, 5, 7-13, and 15 stand rejected for obviousness over the teachings of U.S. Patent No. 6,050,770 to Avitan in view of U.S. Patent No. 4,354,568 to Griesenbrock in view of U.S. Patent No. 4,520,443 to Yuki et al. (hereinafter "Yuki").

In view of the above amendments and the following remarks, reconsideration of these rejections is respectfully requested.

Claim 1, as amended, is directed to an industrial truck comprising a plurality of wheels, a load lifting system, a drive system, and a stabilizing device configured to prevent tipping of the truck. The stabilizing device comprises a plurality of wheel load sensors, each load sensor connected to an individual wheel and configured to measure a wheel load. Each load sensor is an integrated wheel load sensor. The truck further includes a monitoring device. At least two wheels of the truck have a speed-of-rotation sensor connected to the monitoring device to determine a speed and steering radius of the truck. The monitoring device includes an evaluation unit configured to determine transverse tipping forces, longitudinal tipping forces, tipping moments, and load weight based on the measured wheel loads, speed, and steering radius. The monitoring device is connected with actuator units to control inclination of a lifting mast, adjusting the height of a load, adjusting vehicle speed, adjusting vehicle acceleration, adjusting braking intensity, and adjusting steering angle. The monitoring device controls the load lifting system and the drive system of the truck based on the wheel load and speed-of-rotation sensor data to counteract a measured tipping force.

Avitan discloses a stabilization system having a rear steer wheel 34 with an annular weight load transducer 86 that generates a signal indicative of the axial weight load of the rear wheel. The Examiner notes that Avitan does not disclose an industrial truck having integrated wheel load sensors nor a truck having speed-of-rotation sensors. However, the Examiner notes that Avitan discloses load weights being measured at various wheels by transducers. From this, the Examiner concludes that it would have been obvious to provide

integrated wheel load sensors into the Avitan truck. Applicants respectfully disagree. There are numerous ways to measure wheel loads and there is no teaching or suggestion in Avitan to use the integrated wheel load sensors of the invention. Such sensors would be more expensive than simple weight transducers.

With respect to the lack of speed-of-rotation sensors in Avitan, the Examiner relies upon Griesenbrock. Griesenbrock discloses a vehicle 1 having steerable wheels 2 and 3 and non-steerable wheels 6 and 7. Speed sensors 8 and 9 are associated with two of the wheels and are connected to a comparator 10. The Examiner contends it would have been obvious to one of ordinary skill in the art to modify Avitan to provide the speed-of-rotation sensors of Griesenbrock. Again, Applicants respectfully disagree. Avitan teaches that the Avitan system of determining an axial weight load, i.e., the weight component normal to the plane of the support surface 36, constitutes "...a true representative measure of the instantaneous stability of the lift truck 10." (Avitan at column 8, lines 6-11). There is no teaching or suggestion in Avitan to include the speed-of-rotation sensors of Griesenbrock. Additionally, Griesenbrock, as best understood, utilizes the speed-of-rotation sensors 8 and 9 in combination with a complex system having a comparator 10 connected by a device 12 having an additional input 11 which serves to modify a preselected setting, along with an on-off switch 13 and a switching matrix 14 to control the connection between a source of power 15 and travel drive motors 16 and 17. The speed sensors 8 and 9 simply form two components of this complex control system. As best understood, the speed sensors 8 and 9 send a signal to the comparator 10 in synchronism when the vehicle is traveling straight ahead and out of synchronism when the vehicle is cornering. The setting of a switching matrix 14 to control the travel motors 16 and 17 is modified by the comparator 10 to match the steering geometry. There is no teaching or suggestion in either Avitan or Griesenbrock to simply take the speed-of-rotation sensors 8 and 9 from Griesenbrock and place them into Avitan, ignoring the rest of the teachings of Griesenbrock.

While the Examiner also notes that Avitan does not teach the monitoring device connected with actuator units, the Examiner relies upon Yuki for this teaching. Yuki discloses a control device for a loading and unloading mechanism of a fork lift truck to measure the lifting height of a fork and a tilting angle of the fork upright to produce an output signal to adjust the position of the fork and tilting cylinder to perform attitude adjustments required after pick-up or stacking of a load is completed (Yuki at column 3, lines 50-57 and

column 4, lines 16-44). Thus, Yuki is not concerned with the tilting of the truck itself but, rather, with the positioning of the fork and the tilt cylinder.

None of Avitan, Griesenbrock, nor Yuki, either alone or in combination, fairly teaches or suggests the truck as set forth in amended claim 1 in which each wheel has an integrated wheel load sensor and at least two wheels of the truck have speed-of-rotation sensors to determine a speed and steering radius of the truck. Nor do these references teach or suggest the monitoring device connected with actuator units to control the inclination of the lifting mast, height of a load, vehicle speed, vehicle acceleration, braking intensity, and steering angle in order to counteract measured transverse tipping forces, longitudinal tipping forces, and tipping moments based on the measured data. Therefore, claim 1, as amended, is believed patentable over the cited prior art and in condition for allowance. Reconsideration of the rejections and allowance of claim 1 are respectfully requested.

Claims 7-11 depend from, and add further limitations to, claim 1. Since these claims depend from a claim believed to be in condition for allowance, these claims are also believed to be in condition for allowance.

Conclusion

In view of the above amendments and remarks, reconsideration of the rejections and allowance of claims 1 and 7-11 are respectfully requested.

Respectfully submitted,

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